temperature is quantifiable as a value, and the response value of at least one material is constant or varies by no more than about twenty percent during exposure of the material to an analyte gas component at the selected temperature for a period of at least about one minute.

85. A method according to Claim 81 wherein the electrical response is selected from the group consisting of resistance, impedance, capacitance, voltage or current.

86. A method according to Claim 81 wherein at least one chemo/electro-active material is a metal oxide.

87. A method for analyzing at least one individual gas component in a multi-component gas mixture, comprising:

(a) providing an array of at least two chemo/electro-active materials, each chemo/electro-active material having a different electrical response characteristic upon exposure at a selected temperature to the individual gas component than each of the other chemo/electro-active materials, the electrical response characteristic of each material being quantifiable as a value, wherein the response value of at least one material is constant or varies by no more than about twenty percent during exposure of the material to an individual gas component at the selected temperature for a period of at least about one minute;

(b) determining the electrical response value of each chemo/electro-active material upon exposure of the array to the gas mixture; and

(c) performing an analysis of the individual gas component from the electrical response values.

88. A method according to Claim 87 wherein the array is situated within the gas mixture, which has a temperature of about 400°C or more.

89. A method according to Claim 87 wherein the gas mixture is an emission from a combustion process.

90. A method according to Claim 87 wherein the analysis performed comprises calculating the concentration within the gas mixture of the individual gas component.

91. A method according to Claim 87 wherein the temperature of each chemo/electro-active material is determined substantially only by the variable temperature of the gas mixture.

92. A method according to Claim 87 wherein the electrical response is selected from the group consisting of resistance, impedance, capacitance, voltage or current.

93. A method according to Claim 87 wherein at least one chemo/electro-active material is a metal oxide.

94. A method according to Claim 87 wherein the array is situated in the gas mixture, which has a temperature of less than about 400°C, and the array has a substantially constant temperature of about 400°C or more.